

QUAESTIONES ENTOMOLOGICAE

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Editorial — Profit without Honour

Could the widespread use of DDT be a disaster? This question was the title given by the late E. H. Strickland to a short paper which he wrote in 1945 (Ent. News 56: 85-88). He answered this rhetorical question with a qualified yes. His qualifications were two. Firstly, that DDT proved to approach in effectiveness the claims then made for it; secondly that it be employed on a widespread scale, over large connected areas. Both requirements have been met. For once, a commercial product had indeed met the claims made for it, at least as regards initial effectiveness. And DDT has certainly been used over large connected areas. Do we have a disaster on our hands? Or have we heeded this 25 year old prophesy in time?

When Strickland wrote, little was known of the persistence of DDT and less of its cumulative build-up in food chains. Yet he correctly foresaw the hazards of threatening the maintenance of populations of predators — at any level.

It can be estimated that about 4.5 million tons of DDT have been produced and most of this has been released into the biosphere. This would represent 0.25 lb. per acre of the 55½ million square miles of the land surface of the earth, or 2.4 lb. per arable acre. And for many years now DDT has not been alone; other chlorinated hydrocarbons with general toxicity and varying high persistence have joined it. Although it is now known that much of the DDT is in the atmosphere, much in the oceans (Frost, 1969, Environment 11(6): 14), and much in the top ends of food chains (Peterle, *loc. cit.* 34) and although its half-life in the soil may be rather less than 10 years, these figures have serious implications. Good control of mosquito larvae could be obtained in many areas with an application of 0.03 lb. of DDT per acre per annum. It seems inescapable that the insect fauna of the world must by now be so altered that we shall probably never know in any kind of detail what it was like before 1944. This, to an entomologist, is disaster; it will take decades, if not centuries, for a measure of normality to return; how long the first breakdown product, DDE, remains as a hazard in the environment is unknown. None can say how many species, potentially valuable, have gone for good. Let us hope we have at least learned the lesson that persistent broad-spectrum insecticides must be rigidly limited to narrow-spectrum applications.

Looking back, one wonders just how this came about. A chemical which can stop a typhus epidemic instanter and interrupt malaria transmission over large areas of the world, cannot be wholly bad. No other insecticide could have done these things so cheaply, nor with such negligible direct hazard to the sprayers — and the sprayed; 500 million people have lived for years in houses sprayed thrice yearly with DDT with virtually no records of sickness traceable to this. Factory workers making it, day in day out for 20 years, are no less healthy than other people (Laws, Curley, and Biros 1967, Arch. environ. Health 15: 766).

How much then, of the blame for the disaster rests with the users? How much with the manufacturers and their salesmen? Profits have been substantial from DDT (Bean, 1963, Ag. Chem. 18(1): 50-51, 118-119) and the profit motive has been evident in its abuse. The view that if one pound is good two pounds are twice as good is easily exploited. There is no honour in this. The marketing of insecticides should require the provision of details of procedures to detoxify them, in addition to the data on the hazards of their use. None can know for sure when this may be needed nor how urgently. If the environment must be done such damage, to keep the economy going, perhaps we have a sick economy and should cure this first. We are not yet so close to taking over a new planet that we can afford to ignore what we are doing to our present one.

There is indeed little honour to be gleaned in this situation; perhaps only for those who discovered the remarkable properties of this material, plus at best a handful of far-sighted entomologists who warned us early. Did we fail to listen because we have a generation gap at *both* ends?

Brian Hocking

